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ABSTRACT

The paper presents a systems model for the evaluation of prevocational preparation programs for the learning disabled in Australia. The need for accountability in the area of the development of programs for the prevocational preparation of the learning disabled is discussed. Various approaches to evaluation are explored, and a systems model is proposed as best meeting the needs of those who seek to evaluate the effectiveness of their programs. An example of how the model was used to evaluate a work experience program is described, and comments are offered concerning the model's utility. (Author/DLS)

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A Model for the Evaluation of Vocational Preparation Programs for the Learning Disabled

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A Model for the Evaluation of Vocational Preparation Programs for the Learning Disabled[1]

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Abstract

The need for accountability in the area of the development of programs for the pre-vocational preparation of the learning disabled is discussed. Various approaches to evaluation are explored and a systems model is proposed as best meeting the needs of those who seek to evaluate the effectiveness of their programs. An example of how the model was used to evaluate a Work Experience program is described, together with comments being made concerning its utility.

Introduction: In this period of minimal economic growth when marginal members of the workforce such as those with learning difficulties are particularly at risk vocationally it is crucial that we address ourselves to the question of how effective are the various vocational and pre-vocational programs which are mushrooming in our community.

During more propitious times various agencies such as special schools had little difficulty in the initial placement of a large percentage of their school leavers in either sheltered or open employment, but the long term adjustment of many of these initial successes has been thrown into question by follow-up surveys conducted in Victoria and N.S.W. (Limbrick, 1977). Andrews (1973) suggests that in those studies which have shown that a relatively high percentage of mildly handicapped have been successfully placed in employment, the criteria of "successful placement" may be open to different interpretations. It may be that many of the mildly handicapped too readily acquiesce with the decisions others make for them in work situations and their tacit conformity is erroneously taken as successful adjustment. This proposition finds some support in the follow-up study of trainees from a Work Preparation Centre (Ward et al, 1978). Unfortunately, there is a dearth of information on the long term vocational adjustment of the handicapped; a situation that must be redressed if we are to make more effective organizational and instructional decisions during their adolescent or earlier years. Despite years of research, indices of what constitutes

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adequate adjustment and employability have not yet been derived.

The basic thesis of this paper is that whenever vocational programs are planned evaluation should be an integral aspect, for as Wellman and Moore (1975:1) observe,

> *Decisions regarding the establishment, maintenance, modification, and continuation of our programs and activities should have a firm foundation of evidence of effectiveness. The educational community can no longer afford the luxury of judging effectiveness from public popularity, legislative authority, and unsupported professional judgment.*

A further assumption is that evaluation is not an end product, but a means to better program development. Indeed, we are currently witnessing a quickening of society's questioning of educational outputs; reflected in Australia by public reactions to the House of Representatives Select Committee on Learning Difficulties in Children and Adults. The need for a systematic approach to the evaluation problem is therefore being accentuated by this demand for accountability in education. Brody (1976: 251) succinctly states the case for accountability as follows:

> *Instructional evaluation is essential in both classroom and institution. It tells us what we have accomplished and where we have failed. It provides information so that both supportive and skeptical advocates have concrete information to consider and use. Most importantly, it can be used to show parents, clients, and taxpayers what we have accomplished with their time and money.*

Thus we can no longer be satisfied with statements regarding inputs into a system as evidence of satisfactory provisions being made.

Aims of Evaluation

Possibly one of the reasons for the chasm between research findings and their subsequent use is that the aims of program evaluation have not been sufficiently clarified. There are various purposes for which evaluation may be undertaken including:

a) an analysis of a program's effectiveness;

b) the provision of data useful for making decisions about a program's value;

c) the facilitation of program improvement;

d) or all of the above.

Types of Evaluation

The particular aim or combination of aims that the program evaluator has in mind will naturally determine the type or model of evaluation he will use. To this end there are a number of evaluation approaches and models available with the following being the most common.

1. Formative vs. Summative Evaluation

Scriven's (1967) distinction between "formative" or "summative" evaluation is well known and needs little elaboration here. Suffice to say that formative evaluation is the process whereby data are used to develop a curriculum or instructional unit to the stage where it is ready to be used; whereas, summative evaluation is the process of describing the end results or effectiveness of a fully developed program package. Brolin (1976: 248) adequately summarizes the major characteristics of each as follows:

> *Formative evaluation (a) identifies deficiencies and potential improvements in existing curricula rather than measuring the terminal effects of such curricula, (b) locates weaknesses in student performance so teachers can revise and improve instructional materials and procedures, and (c) helps make the instructional process into a self-correcting mechanism. Conversely, summative evaluation determines what has been achieved at the end of a project so decisions can be made regarding the replacement of one curriculum by another.*

2. Goal Attainment vs. System Model

Schulberg and Baker (1968) distinguish between two approaches which parallel those above. The goal attainment model which seeks to approximate the experimental model evaluates the degree of success or failure encountered by the program in reaching its predetermined objectives. Herein, however, may lie its greatest weakness for it is very difficult for an independent evaluator to obtain from an organization a solid statement of program objectives. In the extreme Etzioni (1960, in Schulberg and Baker, 1968) suggests that organizational goals,

particularly public ones, have an illusory quality in that they may never have been intended to be realized.

In terms of the present discussion the very complex nature of the possible outcome variables of a vocational program are such that it is very difficult to objectify them all completely, particularly at the beginning of an intervention process. Furthermore, the goal attainment model fails to recognize adequately the subtle interplay among the multiplicity of variables which impinge upon the process of vocational training. They include the background and personal attributes of the student or client; his physical, psychological, educational, occupational and social attributes and the characteristics of the agent or agencies which are operating to provide help and training.

An alternative approach is to adopt a system model which assumes three basic stages; input, intervention and output. It further recognizes that there are at least four functions which should be evident for an organization to survive (Schulberg and Baker, 1968):

a) the achievement of goals and subgoals,
b) the effective co-ordination of organizational sub-units,
c) the acquisition and maintenance of necessary resources,
d) the adaptation of the organization to the environment and its own internal demands.

These functions are acknowledged by system models such as those schematized by Wellman (1968) in his national study of guidance (Fig. 1) and by Walls and Tseng (1976) in their paradigm of a rehabilitation system (Fig. 2).

Insert Figs. 1 and 2 about here

These two models essentially have similar components in that a structure is provided for determining the relationship between major input

and output variables, either via an experimental design to estimate cause and effect, or an association design to identify correlations for the generation of experimental hypotheses. The critical feature of a systems model is that it allows for process evaluation in addition to product or outcome evaluation. Having provision for continuous feedback of outcome results it allows for the modification of the intervention process and provides for a better understanding of the relationship between one change and subsequent changes. Or as Wellman (1968:6) suggests,

> *the impact of change is hypothesized to be related to interaction effects as apposed to a chain of sequential events.*

In addition, the dynamic nature of the systems model provides a framework wherein the differentiation among students and situations, as well as interactions among these variables, permits a degree of statistical control and interpretation that may lead to the kind of differential conclusions required for definitive process evaluation. In other words, such an evaluative framework has more potential for programmatic utilization than does the summative or goal attainment approach and affords a greater opportunity for individual needs to be met.

A Systems Model in Operation

The present author is currently engaged in two evaluation projects involving the vocational preparation of learning disabled adolescents. In both cases a systems approach is being used. A Macquarie University Research team has been closely associated with the development and process evaluation of programs conducted within the Granville Work Preparation Centre. Here we have a fine example of how both process and product evaluation work together effectively to provide constant feedback so that programs may be refined and adapted according to the changing needs of the client population and the rapidly changing economic climate.

However, I wish to dwell, in this paper, more fully upon the evaluation of a Work Experience Program at a Special School for Mildly Intellectually Handicapped children. This school which attracted a grant from the Schools Innovations Program to set up a Work Experience Program invited the writer to participate in an augmented evaluation of their project. Such an evaluation is characterized by the fact that the commissioned evaluator works with the project director in an advisory capacity, with the major responsibility for the evaluation process itself resting with the project director and his team. This seemed an excellent opportunity for a systems model to be trialled and although at the time of writing the full report is not available, the following is an outline of the procedures followed.

Under the terms of the Innovations Grant the school was able to supplement its staffing resources to allow the careers adviser more time for field work, particularly the supervision of the work experience aspect of the program. In addition the school was able to utilize the resources of its local Technical College which trained students in a number of work skills.

1.0 INPUTS

These include the population served and its needs; together with the situational variables that may impinge upon it.

Procedure

1.1. Data describing the population characteristics were gathered. Wherever possible the variables were described in operational terms. These included - I.Q., vocational test results and recommendations, academic and social attainments, teacher ratings of social and emotional adjustment, degree of parental support and the level of vocational aspirations held by subjects and their parents. Finally in this area, analysis and documentation of the students' needs were made.

1.2. The school's characteristics and its value system were described, particularly the baseline conditions which operated prior to the implementation of the current program.

1.3. The basic characteristics of the school's community were listed, together with the corporate goals and attitudes that were held by the various sections in this community for the students, e.g. the parent body, the commercial/ employer groups, central and regional offices of Education, other government agencies, service clubs.

1.4. A statement of the current economic climate.

2.0 PROCESS

Whereas inputs in this model may be seen as the statement of a problem to be solved (i.e. given this population and its vocational and social needs, how may we best meet them?) the process should be attempts at a solution. Here were stated (and quantified wherever appropriate and possible) the program's objectives, the strategies adopted, the resources made available, and the dynamics of the system. These are primary independent variables that can be subject to experimental management and hence are crucial to feasibility and transportability decisions for similar programs in other settings.

Procedure

2.1. Objectives were stated wherever practicable in operational terms of what a student will learn in the various areas of activity - viz. prevocational, vocational and technical.

2.2. Techniques and strategies employed were identified, e.g. teaching procedures, special programs, group organization.

2.3 Resources were identified. These included additional staff, facilities (e.g. technical education), community involvement and equipment.

2.4. The dynamics of the organization of the process variables were monitored and described. Of particular relevance was the response of the organization to feedback from the ongoing evaluation of outcomes.

3.0 OUTCOMES

As far as possible objective assessments were made of the stated objectives of the program. The instrumentation varied from subjective rating scales to standardized test batteries. An attempt was made to objectify evidence for value statements which were made.

Procedure

3.1. A framework was set up to enable a continuous criterion referenced evaluation of the students' performance in:

i. the academic areas of the program.
ii. the motor skills area of the program.
iii. the work skills training area of the program.
iv. social/prevocational program.

3.2 Rating scales were developed to monitor the students' progress in the personal and social development areas. Ratings were made by teachers, employers and parents.

3.3 Instruments were developed which gathered data from teachers, employers, students and parents concerning their attitudes to the program generally as well as to specific sections of it.

3.4 In order to assemble some local data for the commencement of what could be an Australian revision, two U.S. instruments; The Social and Prevocational Information Battery, Halpern *et al* (1975) and the Self Concept of Ability as a Worker Scale, Burke and Sellin (1972) were administered to the subjects participating in the program. The latter scale was also administered to a control sample of slow learners at a neighbouring high school. Preliminary results indicate that the Special School sample has a significantly higher self concept of their ability as workers, but this result should be interpreted cautiously as our work at the Work Preparation Centre suggests that some learning disabled adolescents have an unrealistic concept of their abilities.

3.5 At the conclusion of the program an analysis was made of the predictive value of certain pre-program assessments (e.g. vocational guidance reports) for subsequent performance in the program as revealed by the various outcome data.

Advantages of A Systems Model

Experiences gained from this study and our work at Granville suggest the following advantages of a systems approach:

a) in contrast to other forms of evaluation it reduces the threatening nature of evaluation and engenders a co-operative spirit rather than a defensive one.

b) it is more client oriented.

c) it does not ask the question did it work, but rather why did it work?

d) fail/safe mechanisms are built in to minimize the possibility of failure.

e) it allows for more effective replications; that is, it affords a greater opportunity for research to be translated into practice.

f) it encourages longitudinal studies wherein both the quantitative as well as the qualitative aspects of a person's vocational, personal and social adjustment may be more adequately determined, providing a more sensitive metric of the program's utility and effectiveness.

g) in contrast to the goal-attainment model which is concerned with the degree of success in reaching a specific objective, the system model establishes the degree to which the organization realizes its goals under a given set of conditions.

h) it maximizes the probabilities that there will be a greater correspondence between job requirements and the individual's requirements.

Changing Social Values and Economic Opportunities

In the context of the current social and economic climate it is an ineluctable fact that our population of children is under threat, witnessed by the tacit acceptance by many of the recently stated views of leading scientists such as Sir Macfarlane Burnet. Luckily, we still have apostles of hope, such as Wolf Wolfensberger, Burton Blatt and Jean Vanier. On the economic scene, too, we are witnessing a diminution of the positive discrimination which began to be afforded to the handicapped under more buoyant times.

It is, therefore, essential for those of us working in the area of the learning disabled to redouble our efforts to develop programs which will stand up to rigorous scrutiny and not be gullibly seduced by what is ephemerally fashionable. No longer can we afford to operate programs, be they vocational or otherwise, in an *a priori* way, under the assumption that what we are doing is logical, reasonable and self-evident. In this period of static growth and limited resources the home, the school and the community must co-operate in ensuring that the cost benefits and cost effectiveness of all programs are of the highest order.

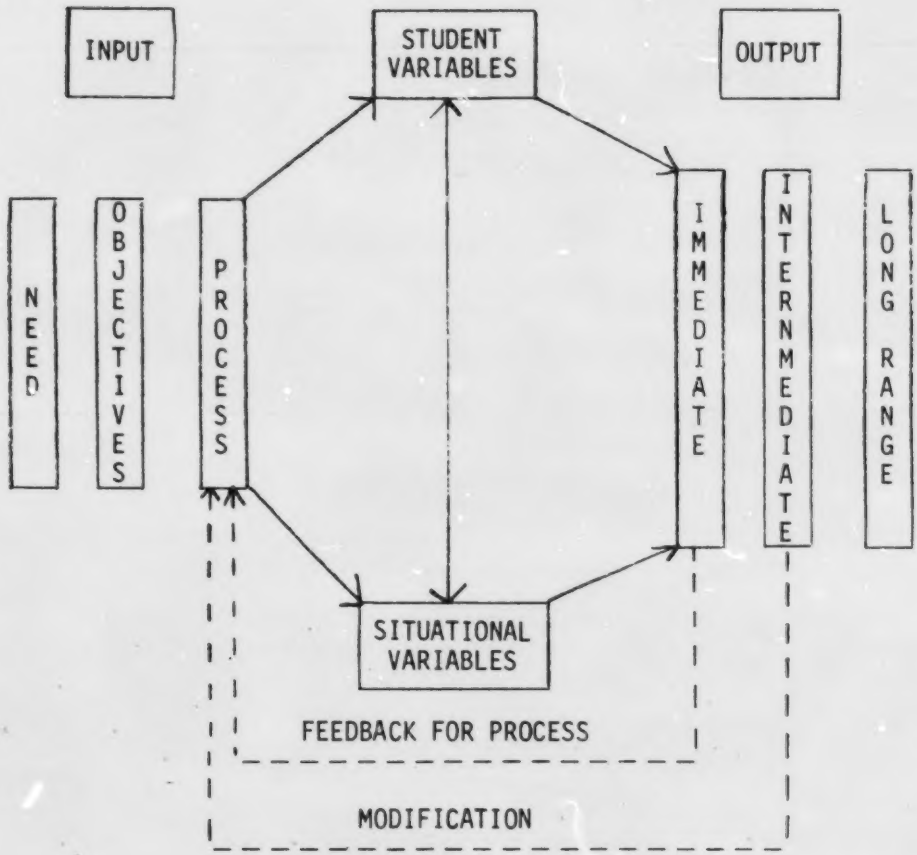

Fig. 1: Systems Model for Evaluation (Wellman and Moore, 1975)

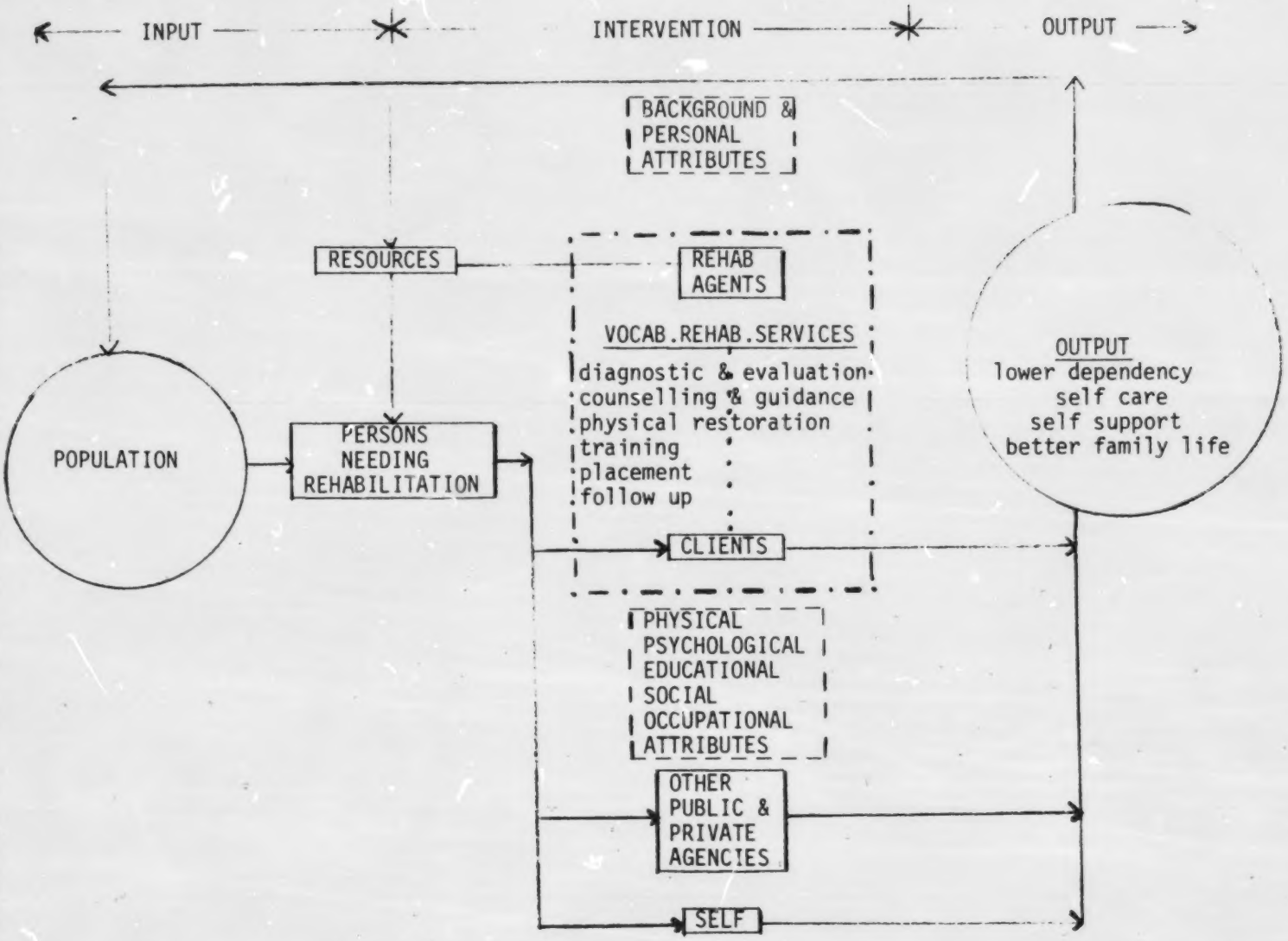

Fig. 2: AN INPUT, INTERVENTION, OUTPUT SYSTEM (Walls and Tseng, 1976)

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